



PATENT

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to:

Mail Stop MISSING PARTS
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450 on July 15, 2004.

Rod D. Baker, Reg. No. 35,434

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appl. No. : 10/815,198
Applicant : William A. Palmisano and Steven A. Belinsky
Filed : March 25, 2004
Title : CANCER MONITORING BY ABERRANT PROMOTOR METHYLATION
OF THE TRANSCRIPTION FACTOR GENES PAX5 ALPHA, PAX5
BETA, NOVEL LOOP HELIX PROTEIN, NOVEL GENE2 AND BETA3
GENES

TC/A.U. : 1645
Examiner : Unknown

Docket No. : 41543 US 0103
Confirmation No. 8645

Mail Stop: MISSING PARTS
Commissioner for Patents
United States Patent and Trademark Office
PO Box 1450
Alexandria, Virginia 22313-1450

INFORMATION DISCLOSURE STATEMENT

S I R :

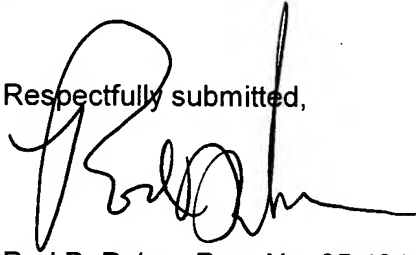
Pursuant to 37 C.F.R. §§ 1.97 and 1.98 and to the duty of disclosure set forth in 37 C.F.R. § 1.56, the Examiner in charge of the above-identified application is requested to consider and make of record the references listed on the PTO 1449 submitted herewith. A copy of each of the listed article references is also enclosed.

Although the information submitted herewith may be "material" to the Examiner's consideration of the subject application, this submission is not intended to constitute an admission that such information is "prior references" as to the claimed invention.

In accordance with 37 C.F.R. § 1.97(g), the filing of this Information Disclosure Statement shall not be construed to mean that a search has been made.

This Information Disclosure Statement is being filed within three months of the filing date of the application or prior to the mailing date of a first Office action. Therefore, no fee or certification is required. 37 C.F.R. § 1.97(b).

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Rod D. Baker', written over the text 'Respectfully submitted,'.

Rod D. Baker, Reg. No. 35,434
Direct line: (505) 998-1504

Enclosures: PTO Form(s) 1449;
Copy of Reference(s)

Peacock, Myers & Adams, P.C.
Attorneys for Applicant
P.O. Box 26927
Albuquerque, NM 87125-6927
(505) 998-1500
FAX (505) 243-2542
Customer No. 005179

Please type a plus sign (+) inside this box



Approved for use through 10-31-99. OMB 0651-0031
Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995 no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)		COMPLETE IF KNOWN	
		Application Number	10/815,198
		Filing Date	March 25, 2004
		First Named Inventor	PALMISANO et al
		Group Art Unit	1645
		Examiner Name	
Sheet 1	of 5	Attorney Docket Number	41543 US 0103



U.S. PATENT DOCUMENTS						
Examiner Initials	Cite No. ¹	U.S. Patent Document Kind Code ² Number (if known)		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		6,017,704	A	Herman, et al.	01/25/2000	
		5,786,146	A	Herman, et al.	07/28/1998	

FOREIGN PATENT DOCUMENTS								
Examiner Initials	Cite No. ¹	Foreign Patent Document Office ³ Number ⁴ Kind Code ⁵ (if known)			Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document	Pages, Columns, Lines Where Relevant Passages or Relevant Figures Appear	T ⁶
Examiner Signature					Date Considered			

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[G:\ANNETTE\LRRI-BelinskyPAX5_1449p1.PTO.doc]

1. Unique citation designation number. 2. See attached Kinds of U.S. Patent Documents. 3. Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). 4. For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. 5. Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. 6. Applicant is to place a check mark here if English language Translation is attached.



Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449B/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)				COMPLETE IF KNOWN	
				Application Number	10/815,198
				Filing Date	March 25, 2004
				First Named Inventor	PALMISANO et al
				Group Art Unit	1645
				Examiner Name	
Sheet	2	of	5	Attorney Docket Number	41543 US 0103

OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS			
Examiner Initials	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	T ²
		ANTEGUERA, F., et al., "CpG Islands," <i>DNA Methylation: Molecular Biology and Biological Significance</i> , Ed by J.P. Jost & H.P. Saluz, Birkhauser Verlag Basel/Switzerland, Vol. 64 pp 169-185 1993	
		BAYLIN, S.B., et al., "DNA Hypermethylation in Tumorigenesis," <i>Trends in Genetics</i> , Vol. 16 pp 168-174, 2000	
		BELINSKY, S.A., et al., "Aberrant Methylation of <i>p16^{INK4a}</i> is an Early Event in Lung Cancer and a Potential Biomarker for Early Diagnosis," <i>Proc. Natl. Acad. Sci USA</i> , Vol. 95, pp 11191-11896 Sep 1998	
		BROCK, G.J.R., et al., "A Novel Technique for the Identification of CpG Islands Exhibiting Altered Methylation Patterns (ICEAMP)," <i>Nucleic Acids Research</i> , Vol. 29, No. 24e 2001	
		BURBEE, D.G., et al., "Epigenetic Inactivation of RASSSF1A in Lung and Breast Cancers and Malignant Phenotype Suppression," <i>J of Natl Canc Inst</i> , Vol. 93, No. 9, pp 691-699 2001	
		BUSSLINGER, M., et al., "Deregulation of <i>PAX-5</i> by Translocation of the Eμ Enhancer of the <i>IgH</i> Locus Adjacent to Two Alternative <i>PAX-5</i> Promoters in a Diffuse Large-cell Lymphoma," <i>Proc. Natl. Acad. Sci USA</i> , Vol. 93, pp 6129-6134 June 1996	
		CARTER, M.G., et al., "Mice Deficient in the Candidate Tumor Suppressor Gene <i>Hic1</i> Exhibit Development Defects of Structures Affected in the Miller-Dieker Syndrome," <i>Human Molecular Genetics</i> , Vol. 9, No. 3, pp 413-419 2000	
		DU, Y., et al., "Hypermethylation in Human Cancers of the <i>RIZ1</i> Tumor Suppressor Gene, a Member of a Histone/Protein Methyltransferase Superfamily," <i>Cancer Research</i> , Vol. 61, pp 8094-8099 Nov 15 2001	

Examiner Signature		Date Considered	
--------------------	--	-----------------	--

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[G:\ANNETTE\LRRI-BelinskyPAX5_1449p2.PTO.doc]

¹ Unique citation designation number. 2. Applicant is to place a check mark here if English language Translation is attached.

Please type a plus sign (+) inside this box



PTO/SB/08B (10-96)

Approved for use through 10-31-99. OMB 0651-003

Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449B/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)				COMPLETE IF KNOWN	
				Application Number	10/815,198
				Filing Date	March 25, 2004
				First Named Inventor	PALMISANO et al
				Group Art Unit	1645
				Examiner Name	
Sheet	3	of	5	Attorney Docket Number	41543 US 0103

OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS			
Examiner Initials	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	T ²
		COSTELLO, J.R., et al., "Aberrant CpG-Island Methylation has Non-Random and Tumour-type-specific Patterns," <i>Nature Genetics</i> , Vol. 25, pp 132-138 Feb 2000	
		ESTELLER, M., et al., "A Gene Hypermethylation Profile of Human Cancer," <i>Cancer Research</i> , Vol. 61, pp 3225-3229 Apr 15 2001	
		ESTELLER, M., et al., "Detection of Aberrant Promoter Hypermethylation of Tumor Suppressor Genes in Serus DNA from Non-Small Cell Lung Cancer Patients," <i>Cancer Research</i> , Vol. 59, pp 67-70 Jan 1 1999	
		ESTELLER, M., et al., "Inactivation of the DNA Repair Gene <i>O⁶-Methylguanine-DNA Methyltransferase</i> by Promoter Hypermethylation is a Common Event in Primary Human Neoplasia," <i>Cancer Research</i> , Vol. 59, pp 793-797 Feb 15 1999	
		GARDINER-GARDEN, M., et al., "CpG Islands in Vertebrate Genomes," <i>J. Mol. Biol.</i> , Vol. 196, pp 261-282 1987	
		GONZALGO, M.L., et al., "Identification and Characterization of Differentially Methylated Regions of Genomic DNA by Methylation-sensitive Arbitrarily Primed PCR," <i>Cancer Research</i> , Vol.57, pp 5940-599 Feb 15 1997	
		HUANG, T.H-M, et al., "Identification of DNA Methylation Markers for Human Breast Carcinomas Using for Methylation-Sensitive Restriction Fingerprinting Technique," <i>Cancer Research</i> , Vol. 57 pp 1030-1034 Mar 15 1997	
		ISSA, J-P J., et al., " <i>HIC1</i> Hypermethylation is a Late Event in Hematopoietic Neoplasms," <i>Cancer Research</i> , Vol. 57 pp 1678-1681 May 1 1997	

Examiner Signature		Date Considered	
--------------------	--	-----------------	--

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[G:\ANNETTE\LRRI-BelinskyPAX5_1449p3.PTO.doc]

¹ Unique citation designation number. 2. Applicant is to place a check mark here if English language Translation is attached.

Please type a plus sign (+) inside this box



PTO/SB/08B (10-96)

Approved for use through 10-31-99. OMB 0651-003

Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449B/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)				COMPLETE IF KNOWN	
				Application Number	10/815,198
				Filing Date	March 25, 2004
				First Named Inventor	PALMISANO et al
				Group Art Unit	1645
				Examiner Name	
Sheet	4	of	5	Attorney Docket Number	41543 US 0103

OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS			
Examiner Initials	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	T ²
		JOHNSON, D.H., et al., "Recent Advances with Chmotherapy for NSCLC: The ECOG Experience," <i>Oncology</i> , Vol. 12, No. 1, Suppl 2 pp 67-70 Jan 1998	
		JONES, P.A., et al., "Cancer Epigenetics Comes of Age," <i>Nature Genetics</i> , Vol. 21 pp 163-167 Feb 1999	
		PALMISANO, W.A., et al., "Aberrant Promoter Methylation of the Transcription Factor Genes PAX5 α and β in Human Cancers," <i>Cancer Research</i> Vol. 63 pp 4620-4625 Aug 1 2003	
		PALMISANO, W.A., et al., "Predicting Lung Cancer by Detecting Aberrant Promoter Methylation in Sputum," <i>Cancer Research</i> Vol. 60 pp5954-5958 Nov 1 2000	
		SALEM, C.E., et al., "PAX6 Methylation and Ectopic Expression in Human Tumor Cells," <i>Int. J. Cancer</i> Vol 87 pp 179-185 2000	
		SCHÄFER, B.W., "Emerging Roles for PAX Transcription Factors in Cancer Biology," <i>Gen. Physiol. Biophys</i> Vol 17 pp 211-224 1998	
		SILVA, J.M., et al., "Persistence of Tumor DNA in Plasma of Breast Cancer Patients After Mastectomy," <i>Annals of Surgical Oncology</i> Vol 9, No. 1 pp 71-76 2002	
		STUART E.T., et al., "Loss of p53 Function Through PAX-Mediated Transcriptional Repression," <i>The EMBO Journal</i> Vol. 14, No. 22 pp 5638-5645 1995	
		STUART, E.T., et al., "PAX and HOX IN Neoplasia," <i>Advances in Genetics</i> Vol 33 pp 255-275 1995	

Examiner Signature		Date Considered	
--------------------	--	-----------------	--

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[G:\ANNETTE\LRRI-BelinskyPAX5_1449p4.PTO.doc]

¹ Unique citation designation number. 2. Applicant is to place a check mark here if English language Translation is attached.



Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449B/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)				COMPLETE IF KNOWN			
				Application Number		10/815,198	
				Filing Date		March 25, 2004	
				First Named Inventor		PALMISANO et al	
				Group Art Unit		1645	
				Examiner Name			
Sheet	5	of	5	Attorney Docket Number		41543 US 0103	

OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS			
Examiner Initials	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	T ²
		TESTA, J.R., et al., "Cytogenic Analysis of 63 Non-Small Cell Lung Carcinomas: Recurrent Chromosome Alterations Amid Frequent and Widespread Genomic Upheaval," <i>Genes, Chromosomes & Cancer</i> , Vol. 11 pp 178-194 1994	
		TOYOOKA, K.O., et al., "Loss of Expression and Aberrant Methylation of the <i>CDH13</i> (H-Cadherin) Gene in Breast and Lung Carcinomas," <i>Cancer Research</i> Vol 61 pp 4556-4560 June 1 2001	
		TOYOTA, M., et al., "Identification of Differentially Methylated Sequences in Colorectal Cancer by Methylated CpG Island Amplification," <i>Cancer Research</i> Vol. 59 pp 2307-2312 May 15 1999	
		TOYOTA, M., et al., "CpG Island Methylator Phenotype in Colorectal Cancer," <i>Proc. Natl Acad Sci USA</i> Vol 96 pp 8681-8686 July 1999	
		TOYOTA, M., et al., "Inactivation of <i>CACNA1G</i> , A t-Type Calcium Channel Gene, by Aberrant Methylation of its 5' CpG Island in Human Tumors," <i>Cancer Research</i> Vol 59 pp 4535-4541 Sep 1 1999	
		WALES, M.M., et al., "p53 Activates Expression of <i>HIC-1</i> , A New Candidate Tumour Suppressor Gene on 17p13.3," <i>Nature Medicine</i> , Vol 1 No 6 pp570-577 June 1995	
		YAN, P.S., et al., "Dissecting Complex Epigenetic Alterations in Breast Cancer Using CpG Island Microarrays," <i>Cancer Research</i> Vol 61 pp 8375-8380 Dec 1 2001	
		YANG, X., et al., "DNA Methylation in Breast Cancer," <i>Endocrin-Related Cancer</i> , Vol. 8, pp 115-127 2001	
		ZÖCHBAUER-MÜLLER, S., et al., "5' CpG Island Methylation of the <i>fhit</i> Gene is Correlated with Loss of Gene Expression in Lung and Breast Cancer," <i>Cancer Research</i> Vol 61, pp 3581-3585 May 1 2001	
		ZOU, H-Z, et al., "Detection of Aberrant p16 Methylation in the Serum of Colorectal Cancer Patients," <i>Clinical Cancer Res</i> , Vol. 8, pp 188-191 Jan 2002	
Examiner Signature		Date Considered	

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[G:\ANNETTE\LRRI-BelinskyPAX5_1449p5.PTO.doc]

¹ Unique citation designation number. 2. Applicant is to place a check mark here if English language Translation is attached.